INTERNATIONAL TECHNOLOGY CORPORATION

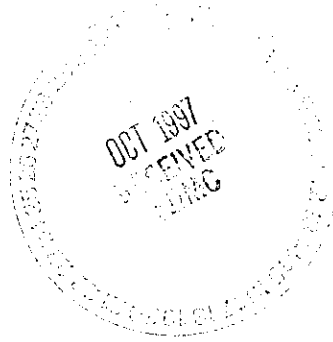
CERTIFICATE OF ANALYSIS

Bechtel Hanford Inc.
P.O. Box 1970
Richland, WA 99352

September 6, 1994

Attention: Joan Kessner

RECORD COPY



SAF Number	:	B94-008
Date SDG Closed	:	August 01, 1994
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W0157
Data Deliverable	:	Summary

I. Introduction

On August 01, 1994, one (1) sample was received by the Quanterra Environmental Services Richland Laboratory (QTESRL) for radiochemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Bechtel Hanford, Inc., (BHI) specific ID:

QTESRL ID	BHI ID	Matrix	Date of Receipt
40801201	B09TD9	Water	08/01/94

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Gamma Spectroscopy
Gamma Scan by method ITAS-RD-3219
Liquid Scintillation Counting
Technetium-99 by method ITAS-IT-RS-0001

III. Quality Control

The analytical results for each analysis performed under SDG W0157 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate. Any exceptions have been noted in the "Comments" section.

Quality control sample results are reported in the same units as sample results.

IV. Comments

Results from the initial radioactivity screening of this sample classified it as Category I.

Gamma Spectroscopy

Gamma Scan by method ITAS-RD-3219
Co-57 was detected in the LCS, but is not reported because it is a false positive result caused by interference with Eu-152 at the 122 keV energy line. K-40 and Pb-212 were detected in the batch blank but are not reported because the results are less than two times the error. Cd-109 was also detected in the batch blank, however, the result is not reported because it is a suspected false positive result caused by x-ray lines produced by energy reflection from the detector shielding. The batch blank aliquot size was reduced to match the smaller than normal sample volume available for analysis of the sample and its duplicate. As a result, the batch blank results did not meet the contractual detection limits for Co-58, Cs-137, and Eu-154. Also, as a result of insufficient sample size, sample B09TD9 and the duplicate of sample B09TD9 did not meet the contractual detection limits for Co-58, Fe-59, and Cs-137. All other aspects of the LCS, batch blank, sample, and sample duplicate data meet contractual requirements.

Quanterra
Environmental Services

SAMPLE RESULTS

LAB NAME:	ITAS-RICHLAND	**SDG:**	W0157
LAB SAMPLE ID:	40801201	**MATRIX:**	WATER
CLIENT ID:	B09TD9	**DATE RECEIVED:**	8/1/94

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CO-58	-3.77E-01	8.85E+00	8.85E+00	1.64E+01	pCi/L	N/A	RD3219
CO-60	9.70E+00	1.20E+01	1.20E+01	2.47E+01	pCi/L	N/A	RD3219
CS-137DA	1.06E+00	9.22E+00	9.22E+00	1.72E+01	pCi/L	N/A	RD3219
EU-152	-1.43E+01	2.27E+01	2.27E+01	3.54E+01	pCi/L	N/A	RD3219
EU-154	5.07E+00	1.76E+01	1.76E+01	3.90E+01	pCi/L	N/A	RD3219
EU-155	-4.38E+00	1.74E+01	1.74E+01	2.88E+01	pCi/L	N/A	RD3219
FE-59	-1.15E+01	2.11E+01	2.11E+01	3.65E+01	pCi/L	N/A	RD3219
K-40	3.29E+02	2.02E+02	2.04E+02	N/A	pCi/L	N/A	RD3219
TC-99	2.05E+02	3.10E+00	2.59E+01	2.63E+00	pCi/L	95.10%	ITAS-IT-RS-0001

Number of Results: 9

Quanterra
Environmental Services

DUPLICATE RESULTS

LAB NAME:	ITAS-RICHLAND	**SDG:**	W0157
LAB SAMPLE ID:	F0801201	**MATRIX:**	WATER
CLIENT ID:	B09TD9	**DATE RECEIVED:**	8/1/94
ORIG LAB SAMPLE ID:	40801201		

ISOTOPE	DUP RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
CO-58	-3.77E+00	1.08E+01	1.08E+01	1.85E+01	pCi/L	N/A	RD3219	-3.77E-01	163.64%
CO-60	-1.87E+00	1.29E+01	1.29E+01	2.35E+01	pCi/L	N/A	RD3219	9.70E+00	295.53%
CS-137DA	-1.06E-01	8.47E+00	8.47E+00	1.55E+01	pCi/L	N/A	RD3219	1.06E+00	244.44%
EU-152	1.39E+00	2.49E+01	2.49E+01	4.01E+01	pCi/L	N/A	RD3219	-1.43E+01	243.07%
EU-154	-3.00E+01	3.07E+01	3.09E+01	4.50E+01	pCi/L	N/A	RD3219	5.07E+00	281.35%
EU-155	-6.42E+00	2.01E+01	2.01E+01	3.17E+01	pCi/L	N/A	RD3219	-4.38E+00	37.78%
FE-59	-2.17E+00	2.27E+01	2.27E+01	4.17E+01	pCi/L	N/A	RD3219	-1.15E+01	136.50%
K-40	3.45E+02	2.21E+02	2.24E+02	N/A	pCi/L	N/A	RD3219	3.29E+02	4.75%
TC-99	3.92E+02	4.14E+00	4.62E+01	2.63E+00	pCi/L	95.10%	ITAS-IT-RS-0001	2.05E+02	62.65%

Number of Results: 9

Quanterra
Environmental Services

BLANK RESULTS

LAB NAME: ITAS-RICHLAND **SDG:** W0157

LAB SAMPLE ID: L080121B **MATRIX:** WATER

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	METHOD NUMBER
CO-58	-1.51E+00	8.97E+00	8.97E+00	1.53E+01	pCi/L	N/A	RD3219
CO-60	-8.27E+00	1.08E+01	1.09E+01	1.77E+01	pCi/L	N/A	RD3219
CS-137DA	-1.79E+01	1.13E+01	1.14E+01	1.56E+01	pCi/L	N/A	RD3219
EU-152	-6.59E+00	1.79E+01	1.79E+01	3.15E+01	pCi/L	N/A	RD3219
EU-154	9.60E+00	2.64E+01	2.64E+01	5.42E+01	pCi/L	N/A	RD3219
EU-155	1.09E+01	1.47E+01	1.48E+01	2.95E+01	pCi/L	N/A	RD3219
FE-59	-1.36E+01	1.79E+01	1.79E+01	2.59E+01	pCi/L	N/A	RD3219
TC-99	5.68E-01	1.13E+00	4.99E+00	2.63E+00	pCi/L	95.10%	ITAS-IT-RS-0001

Number of Results: 8

Quanterra
Environmental Services

LABORATORY CONTROL SAMPLE

LAB NAME:	ITAS-RICHLAND	**SDG:**	W0157
LAB SAMPLE ID:	L080121M	**MATRIX:**	WATER

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	EXPECTED	RECOVER
TC-99	3.06E+02	3.74E+00	3.69E+01	2.63E+00	pCi/L	95.10%	3.38E+02	90.53%

Number of Results: 1

Quanterra
Environmental Services

LABORATORY CONTROL SAMPLE

LAB NAME: ITAS-RICHLAND **SDG:** W0157

LAB SAMPLE ID: L080121S **MATRIX:** WATER

ISOTOPE	RESULT	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	YIELD	EXPECTED	RECOVERY
CO-60	1.74E+02	2.89E+01	3.37E+01	N/A	pCi/L	N/A	1.54E+02	112.99%
CS-137DA	1.15E+02	2.20E+01	2.48E+01	N/A	pCi/L	N/A	1.25E+02	92.00%
EU-152	2.61E+02	4.50E+01	5.20E+01	1.00E+02	pCi/L	N/A	3.06E+02	85.29%

Number of Results: 3

Quanterra
Environmental Services

MATRIX SPIKE RESULTS

LAB NAME:	ITAS-RICHLAND	**SDG:**	W0157
LAB SAMPLE ID:	W0801201	**MATRIX:**	WATER

ISOTOPE	SPIKE RESULT*	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA	REPORT UNIT	SAMPLE RESULT	EXPECTED	RECOVERY
TC-99	7.74E+02	5.79E+00	8.77E+01	2.63E+00	pCi/L	2.05E+02	3.39E+02	228.32%

Number of Results: 1

0010

*Spike Result Corrected For Sample Result

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 405012

Lab Sample Numbers or SDG: W0157 -

Method/Test/Parameter: Gamma

	Review item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A.	**Calibration**				
1.	Is the calibration documentation included where applicable?			✓	
B.	**Sample Analysis**				
1.	Are the sample Yields within acceptance criteria?			✓	
2.	Were all sample holding times met?	✓			✓
C.	**QC Samples**				
1.	Is the Blank Yield within acceptance criteria?			✓	
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	✓	✓		✓
3.	Is the Blank result ≤ the Contract Detection Limit?	✓			✓
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			✓	
5.	Is the LCS result within acceptance criteria?	✓			✓
6.	Is the LCS yield within acceptance criteria?			✓	
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?			✓	
8.	MS/MSD results and yield meet acceptance criteria?			✓	
9.	Duplicate sample results and yield meet acceptance criteria?	✓			✓
D.	**Other**				
1.	Are all nonconformances included and noted?	✓			✓
2.	Are all required forms filled out?	✓			✓
3.	Correct methodology used?	✓			
4.	Transcription checked?	✓			
5.	Were all calculations checked at a minimum frequency?	✓			
6.	Units checked?	✓			✓

Comments on any "No" response: MDA met for some isotopes other's not met

Analyst: Joel [signature] Date: 8-16-94

Second Level Review: [signature] Date: 8/16/94

Form No: LS-038, 3/94, Rev 2

Transfer normal 7 + K40 for client sample + duplicate

0011

INTERNATIONAL TECHNOLOGY CORPORATION

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ITAS-Richland
LABORATORY NONCONFORMANCE MEMO (NCM)

0781

PROJECT ID (Name/Number): BHC

NCM INITIATED BY (Name/Date): Joel T Kempema 8-16-94

PARAMETER(S): Gamma

SAMPLE NUMBER(S) AFFECTED: L0801218, L0801215, 40801201, F0801201

MATRIX: Water

AREA: ☐ SHIP/REC ☒ RADIOCHEM ☐ COUNTING ☐ BIOASSAY ☐ DATA VERIF ☐ REPORTING ☐ OTHER:

NONCONFORMANCE [check appropriate item(s)]:

1. ☐ Not enough sample received for proper analysis.
2. ☐ Holding time exceeded by _____ days due to:
   - 2.1 ☐ CATEGORY I: Out of Laboratory Control
     - ☐ Holding time expired at receipt.
   - 2.2. ☐ CATEGORY II: Laboratory Dependent
     - ☐ work backlog ☐ instrument failure
     - ☐ communication ☐ other (see #10)
   - 2.3. ☐ CATEGORY III: Laboratory Reruns
     - 2.3.1. ☐ *QA/QC:*
       - ☐ surrogates ☐ internal standards
       - ☐ spike recoveries ☐ blank contamination
     - 2.3.2. ☐ *CONFIRMATION:*
       - ☐ second column ☐ contamination check
       - ☐ other (see #10)
     - 2.3.3. ☐ *DILUTION:*
       - ☐ over calibration ☐ under calibration
       - ☐ other (see #10)
     - 2.3.4. ☐ *OTHER: (see #10)*
3. ☐ Sample lost during extraction/analysis; no re-prep or re-analysis possible.
4. ☐ QC data reported to client outside of:
   - ☐ method limits ☐ internal limits
   - ☐ QAPP limits ☐ contract limits
   - ☐ regulatory limits ☐ blank criteria
5. ☐ Incorrect procedure(s) used. (See #10)
6. ☐ Invalid instrument calibration. (See #10)
7. ☐ Incorrect/incomplete data reported to client. (See #10)
8. ☐ Reported detection limit(s) higher than:
   - ☐ method limits ☐ QAPP limits
   - ☐ contract limits ☐ other (see #10)

   Due to:
   - ☐ sample matrix ☐ insufficient sample
   - ☐ instrumentation ☐ other (see #10)
9. ☒ Other (specify): 1B K40, Cd109, Pb212 not Reported
   1S - Co57 not reported
10. ☒ Comments/Explanation: Either error x2 > CL or Cd109 phantom peak or Co57 is interference from Eu152 in spike

NOTIFICATION [check appropriate item(s)]:

1. ☐ Client notified by (name and date):_____
   - ☐ in writing ☐ by FAX
   - ☐ by phone ☐ Other (explain)
2. ☐ Client's name _____ and response:
   - ☐ process "as is" ☐ resample
   - ☐ on hold til ____ ☐ Other (explain)

PROJECT MANAGER (signature & date): Kim Scott 8/16/94

FURTHER ACTION REQUIRED, SEE PAGE 2 OF 2

IT CORPORATION

CORRECTIVE ACTION

[x] ROOT CAUSE: INITIALS/DATE JTK 8-16-94

(1) 2X Error > result
(2) Cd109 is a known false detect possibly from cosmic ray interaction w/ ... lines
(3) Co57 is a false detect from Eu152 although Co57 key line is not found when this occurs

[x] CORRECTIVE ACTION: INITIALS/DATE JTK 8-16-94

Data acceptable

[ ] RESPONSIBILITY FOR PERFORMING CORRECTIVE ACTION ASSIGNED TO:

[ ] ACTIONS TO PREVENT RECURRENCE: INITIALS/DATE

FIRST LEVEL SUPERVISOR: Joel Klempema DATE: 8-16-94

RESPONSIBLE MANAGER: [signature] DATE: 8/19/94

QC REVIEW

[ ] NONCONFORMANCE [x] DEFICIENCY [ ] RERUN

[ ] FURTHER ACTION REQUIRED:

ASSIGNED TO:

QC COORDINATOR: C Black DATE: 8/31/94

CORRECTIVE ACTION VERIFICATION

[x] VERIFIED [ ] CANNOT VERIFY (specify reason)

REASON:

NCM CLOSURE

QC COORDINATOR: C Black DATE: 8/31/94

0013

SIGNED ORIGINAL MUST BE RETAINED IN FILE: [ ] QUALITY/OPERATIONS FILE [x] PROJECT FILE

INTERNATIONAL TECHNOLOGY CORPORATION

0783

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ITAS-Richland
LABORATORY NONCONFORMANCE MEMO (NCM)

PROJECT ID (Name/Number): BHC 41080120I

NCM INITIATED BY (Name/Date): LELON MCLOUTH 8-8-94

PARAMETER(S): GAMMA

SAMPLE NUMBER(S) AFFECTED: 41080120I L0801218, L0801215, F0801201

MATRIX: WATER

AREA: ☐ SHIP/REC ☒ RADIOCHEM ☐ COUNTING ☐ BIOASSAY ☐ DATA VERIF ☐ REPORTING ☐ OTHER:

NONCONFORMANCE [check appropriate item(s)]:

1. ☒ Not enough sample received for proper analysis.
2. ☐ Holding time exceeded by _____ days due to:
   - 2.1. ☐ CATEGORY I: Out of Laboratory Control
     - ☐ Holding time expired at receipt
   - 2.2. ☐ CATEGORY II: Laboratory Dependent
     - ☐ work backlog ☐ instrument failure
     - ☐ communication ☐ other (see #10)
   - 2.3. ☐ CATEGORY III: Laboratory Reruns
     - 2.3.1. ☐ *QA/QC:*
       - ☐ surrogates ☐ internal standards
       - ☐ spike recoveries ☐ blank contamination
     - 2.3.2. ☐ *CONFIRMATION:*
       - ☐ second column ☐ contamination check
       - ☐ other (see #10)
     - 2.3.3. ☐ *DILUTION:*
       - ☐ over calibration ☐ under calibration
       - ☐ other (see #10)
     - 2.3.4. ☐ *OTHER: (see #10)*
3. ☐ Sample lost during extraction/analysis; no re-prep or re-analysis possible.
4. ☐ QC data reported to client outside of:
   - ☐ method limits ☐ internal limits
   - ☐ QAPP limits ☐ contract limits
   - ☐ regulatory limits ☐ blank criteria
5. ☐ Incorrect procedure(s) used. (See #10)
6. ☐ Invalid instrument calibration. (See #10)
7. ☐ Incorrect/incomplete data reported to client. (See #10)
8. ☒ Reported detection limit(s) higher than:
   - ☐ method limits ☐ QAPP limits
   - ☒ contract limits ☐ other (see #10)

   Due to:
   - ☐ sample matrix ☒ insufficient sample
   - ☐ instrumentation ☒ other (see #10)
9. ☒ Other (specify): NOT ENOUGH SAMPLE RECEIVED TO RUN AT FULL VOLUME.
10. ☒ Comments/Explanation: MDA's for some isotopes not met, other isotopes do meet MDA/CC

NOTIFICATION [check appropriate item(s)]:

1. ☐ Client notified by (name and date): _____
   - ☐ in writing ☐ by FAX
   - ☐ by phone ☐ Other (explain)
2. ☐ Client's name _____ and response:
   - ☐ process "as is" ☐ resample
   - ☐ on hold til ____ ☐ Other (explain)

PROJECT MANAGER (signature & date): Jeff Scott 5/16/94

FURTHER ACTION REQUIRED, SEE PAGE 2 OF 2

CORRECTIVE ACTION

☒ ROOT CAUSE: INITIALS/DATE JE 8-14-94

insufficient sample volume to meet MDA's

☒ CORRECTIVE ACTION: INITIALS/DATE JE 8-14-94

Run at 1/2 volume with duplicate per instructions from BHC (client)

☐ RESPONSIBILITY FOR PERFORMING CORRECTIVE ACTION ASSIGNED TO:

☐ ACTIONS TO PREVENT RECURRENCE: INITIALS/DATE_____

FIRST LEVEL SUPERVISOR: Joel Rengers DATE: 8-14-94

RESPONSIBLE MANAGER: [signature] DATE: 8/19/94

QC REVIEW

☐ NONCONFORMANCE ☒ DEFICIENCY ☐ RERUN

☐ FURTHER ACTION REQUIRED:

ASSIGNED TO:

QC COORDINATOR: C Black DATE: 8/31/94

CORRECTIVE ACTION VERIFICATION

☒ VERIFIED ☐ CANNOT VERIFY (specify reason)

REASON:

NCM CLOSURE

QC COORDINATOR: C Black DATE: 8/31/94

SIGNED ORIGINAL MUST BE RETAINED IN FILE: ☐ QUALITY/OPERATIONS FILE ☒ PROJECT FILE

INTERNATIONAL TECHNOLOGY CORPORATION

ITAS Data Review Checklist
RADIOCHEMISTRY

Work Order No(s): 408012

Lab Sample Numbers or SDG: WQ150

Method/Test/Parameter: Tc-99

	Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level review (✓)
A. 1.	**Calibration** Is the calibration documentation included where applicable?			X	
B. 1.	**Sample Analysis** Are the sample Yields within acceptance criteria?			X	
2.	Were all sample holding times met?			X	
C. 1.	**QC Samples** Is the Blank Yield within acceptance criteria?			X	
2.	Is the Minimum Detectable Activity for the Blank result ≤ the Contract Detection Limit?	X			—
3.	Is the Blank result ≤ the Contract Detection Limit?	X			—
4.	Is the Blank result greater than the Contract Detection Limit but the Sample result less than the Contract Detection Limit?			X	
5.	Is the LCS result within acceptance criteria?	X			—
6.	Is the LCS yield within acceptance criteria?			X	
7.	Is the LCS Minimum Detectable Activity less than or equal to the Contract Detection Limit?	X			—
8.	MS/MSD results and yield meet acceptance criteria?		X		
9.	Duplicate sample results and yield meet acceptance criteria?		X		—
D. 1.	**Other** Are all nonconformances included and noted?	X			—
2.	Are all required forms filled out?	X			—
3.	Correct methodology used?	X			
4.	Transcription checked?	X			
5.	Were all calculations checked at a minimum frequency?	X			
6.	Units checked?	X			—

Comments on any "No" response:

See NCM

Analyst: [signature] Date: 8/17/94

Second Level Review: [signature] Date: 8/22/94

Form No: LS-038, 3/94, Rev 2

INTERNATIONAL TECHNOLOGY CORPORATION

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ITAS-Richland
LABORATORY NONCONFORMANCE MEMO (NCM)

0742

PROJECT ID (Name/Number): BHC W0157

NCM INITIATED BY (Name/Date): SEE 8/17/94

PARAMETER(S): Tc99

SAMPLE NUMBER(S) AFFECTED: W0901201, 408012

MATRIX: Water

AREA: ☐ SHIP/REC ☒ RADIOCHEM ☐ COUNTING ☐ BIOASSAY ☐ DATA VERIF ☐ REPORTING ☐ OTHER:

NONCONFORMANCE [check appropriate item(s)]:

1. ☐ Not enough sample received for proper analysis.
2. ☐ Holding time exceeded by _____ days due to:
   - 2.1 ☐ CATEGORY I: Out of Laboratory Control
     - ☐ Holding time expired at receipt.
   - 2.2 ☐ CATEGORY II: Laboratory Dependent
     - ☐ work backlog ☐ instrument failure
     - ☐ communication ☐ other (see #10)
   - 2.3 ☐ CATEGORY III: Laboratory Reruns
     - 2.3.1. ☐ *QA/QC:*
       - ☐ surrogates ☐ internal standards
       - ☐ spike recoveries ☐ blank contamination
     - 2.3.2. ☐ *CONFIRMATION:*
       - ☐ second column ☐ contamination check
       - ☐ other (see #10)
     - 2.3.3. ☐ *DILUTION:*
       - ☐ over calibration ☐ under calibration
       - ☐ other (see #10)
     - 2.3.4. ☐ *OTHER: (see #10)*
3. ☐ Sample lost during extraction/analysis; no re-prep or re-analysis possible.
4. ☐ QC data reported to client outside of:
   - ☐ method limits ☐ internal limits
   - ☐ QAPP limits ☐ contract limits
   - ☐ regulatory limits ☐ blank criteria
5. ☐ Incorrect procedure(s) used. (See #10)
6. ☐ Invalid instrument calibration. (See #10)
7. ☐ Incorrect/incomplete data reported to client. (See #10)
8. ☐ Reported detection limit(s) higher than:
   - ☐ method limits ☐ QAPP limits
   - ☐ contract limits ☐ other (see #10)

   Due to:
   - ☐ sample matrix ☐ insufficient sample
   - ☐ instrumentation ☐ other (see #10)
9. ☒ Other (specify): Duplicate miss match. and associated matrix spike problem.
10. ☐ Comments/Explanation:

NOTIFICATION [check appropriate item(s)]:

1. ☐ Client notified by (name and date): _____
   - ☐ in writing ☐ by FAX
   - ☐ by phone ☐ Other (explain)
2. ☐ Client's name _____ and response:
   - ☐ process "as is" ☐ resample
   - ☐ on hold til ___ ☐ Other (explain)

PROJECT MANAGER (signature & date): Lee Scott 8/22/94

FURTHER ACTION REQUIRED, SEE PAGE 2 OF 2

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IT CORPORATION

LOG #: RD-94-________ page 2 of 2

CORRECTIVE ACTION

☒ ROOT CAUSE: INITIALS/DATE SE 8/17/94

The muddy nature of this sample caused unequal portions of sediment to be run with each aliquant. Thus, there is a discrepancy between the sample, the dup. and matrix spike. If the dup. value is subtracted from matrix spike a rec of 112.6% is achieved.

☒ CORRECTIVE ACTION: INITIALS/DATE SE 8/17/94

Report results INS for reanalysis

RESPONSIBILITY FOR PERFORMING CORRECTIVE ACTION ASSIGNED TO:

☐ ACTIONS TO PREVENT RECURRENCE: INITIALS/DATE ________

FIRST LEVEL SUPERVISOR: [signature] DATE: 8/17/94

RESPONSIBLE MANAGER: [signature] DATE: 8/25/94

QC REVIEW

☐ NONCONFORMANCE ☒ DEFICIENCY ☐ RERUN

☐ FURTHER ACTION REQUIRED

ASSIGNED TO

QC COORDINATOR: [signature] DATE: 8/25/94

CORRECTIVE ACTION VERIFICATION

☒ VERIFIED ☐ CANNOT VERIFY (specify reason)

REASON:

NCM CLOSURE

QC COORDINATOR: [signature] DATE: 8/25/94

SIGNED ORIGINAL MUST BE RETAINED IN FILE: ☐ QUALITY/OPERATIONS FILE ☒ PROJECT FILE

*3

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [X] Priorty [ ] Normal

Collector: L.E. ROGERS / W. SETZER	Company Contact: L.E. ROGERS	Telephone No.: 376-7690
Project Designation: 200-BP-5 (CHARACTER TO SUPPORT PUMP & TREAT)	Sampling Location: 200-BP-5	SAF No.: B94-008
Ice Chest No.: GWS015	Field Logbook No.: EFL-1143	Method of Shipment: GOVERNMENT VEHICLE
Shipped To: QUANTERRA	Offsite Property No.	Bill of Lading/Air Bill No.
Possible Sample Hazards/Remarks		
Special Handling and/or Storage: COOL TO 4C		

Preservative	NaOH	HCl		none														
Type of Container	P	P/G		G														
No. of Container(s)	1	2		1														
Volume	1000ml	1000ml		40 ml														
SAMPLE ANALYSIS	Cyanide 4080101	Co-60 Tc-99 4080120		Activity scan														

Sample No.	Matrix*	Date Sampled	Time Sampled															
B09TD9	W	7/30/94	0955	✓	✓		✓											
	W																	
	W																	
	W																	
	W																	
	W																	

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By	W.P. Setzer	8/1/94 0800
Received By	R.F. Simpson	8/1/94 0800
Relinquished By	R.F. Simpson	8/1/94 1145
Received By	Quanterra	8/1/94 1045
Relinquished By		
Received By		
Relinquished By		
Received By		

SPECIAL INSTRUCTIONS

SDG W0157

Matrix*

S	=	Soil
SE	=	Sediment
SO	=	Solid
SL	=	Sludge
W	=	Water
O	=	Oil
A	=	Air
DS	=	Drum Solids
DL	=	Drum Liquids
T	=	Tissue
WI	=	Wipe
L	=	Liquid
V	=	Vegetation
X	=	Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NO. (To be obtained from PROPERTY MANAGEMENT)
BHI		W94-0-0746-45

PART I - TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☐ Prepaid ☐ Collect

Shipped to
Company: Quanterra (IT)
Address: 2800 George Washington Way
City: Richland, WA 99352 State: Zip Code:
Country:

Off-site Custodian:

On-site Custodian: Payroll No.:

Qty.	Property No.	Description (Include Manufacture Name, Model, Serial No.)	Acquisition Cost
1 lbs.		Sample #: B0CJB2 B0CJB3 B0CJB6 B0CJB7 Cooler ID: BOWEHEAD Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.		Sample #: B0CJ96 B0CJ97 Cooler ID: GWS 015 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the off-site use of this property

☐ Required for Project Work. List Project No. 100 HR-3

☐ Business Trip

☐ Off-site Assignment

Bill of lading # NA

☐ Shipment to Subcontractor. List Subcontract No.

☐ Other (Please specify) Sampling supports RI/FS work in the 100 area

RECEIVED
AUG 1 1994
PROPERTY RECORDS

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No.	Date
[signature]	181143	8/1/94

Location of and Contact for Property (Name/Phone No./Bldg./Area)
RMX P. H. Butcher/(509)376-4388

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
8/1/44	8B410 / PE3A1	NA

Originated By	Date	Authorized By	Date
AJ SIMPSON		AJ Simpson	8/1/94
Property Representative Signature	**Date**	**Property Management Approval**	**Date**
		[signature]	8/1/94

PART II - TO BE COMPLETED BY SHIPPING

Authorized Shipping Signature	Date

DISTRIBUTION (AFTER FINAL SIGNATURES)

White - Property Management Yellow - Shipping Green - Accounts Payable Pink - Originator Goldenrod - Property Management

[signature] [signature] 8/1/94 1045

0021 54-3000-478 (01/94)

3

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
2800 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 8-1-94 1045 Client Name WHC

Project/Client # 394-008 Batch or Case # _____

Cooler ID (if noted on the outside of cooler) GW5015

1. Condition of shipping container? O.K
2. Custody Seals on cooler intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☒ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☒
6. Each sample is in a plastic bag? Yes ☒ No ☐
7. Number of sample containers in cooler: 14
8. Samples have: ✓ tape ____ hazard labels
   ____ custody seals ✓ appropriate sample labels
9. Samples are: ✓ in good condition ____ leaking
   ____ broken ____ have air bubbles
   ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 4°

11. The following paperwork should be accounted for (N/A if not applicable): N/A
    Chain of Custody #'(s) _____
    Request for analysis #(s) _____
    Airbill # _____ Carrier _____
12. Have any anomalies been identified above? Yes ☐ No ☑
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature Christine P. Knight Date/Time 8-1-94 1045

FORM NO. LS-042, Rev.0, 2/94

SAMPLE RECEIPT VARIANCE REPORT
ITAS-RICHLAND LABORATORY

WORK ORDER NUMBER: 408011, 408012 DATE INITIATED: 8/1/94

INITIATED BY: TGilmore

DATE/TIME OF SAMPLE (AND/OR RFA & COC) RECEIPT: 8/1/94 1045

CLIENT SAMPLE NUMBER	RFA/COC NUMBERS	ANALYSIS REQUESTED
B09TD9	n/a	Cyanide, Y, TC

Samples were received with the following deficiencies:

- ☐ 1. Not enough sample received for proper analysis.
- ☐ 2. Sample received without proper preservative.
- ☐ 3. No sample received in container.
- ☐ 4. Sample received without a RFA/COC form.
- ☐ 5. No sample ID on container.
- ☐ 6. Sample received broken or leaking.
- ☐ 7. Holding time exceeded at receipt.
- ☐ 8. Custody tape broken.
- ☐ 9. COC not relinquished by client.
- ☐ 10. Sample information on container does not match sample information on the paper work (Explain below).
- ☐ 11. All shipping containers (coolers) on waybill not received with shipment.
  - ☐ RFA/COC received
  - ☐ RFA/COC not received
- ☑ 12. Other (Explain below).

NOTES: No screen data supplied.

SUPERVISOR REVIEW: Joni Heidelberg

PROJECT MANAGER REVIEW: _____

TELEPHONED TO: _____ ON _____ BY _____

TELEFAXED TO: _____ ON _____ BY _____

SIGNED ORIGINAL MUST BE RETAINED IN WORK ORDER FILE

FORM NO. LS-023, 3/92, Rev. 0

080194A.WQ2

TENNELEC #2

SCREENING CALCULATION SPREADSHEET

all Cat I (R3) 8.1.94

Cust Code	Recieved Date		Screening Prep Date		Count Date	Mnts. Cntd	BACKGROUND Alpha	Beta	Mnts
WHC	8-1-964		8-1		8-1	10	15	211	240

Customer ID WHC/LIQ	pH <2 Rcvd/Reiq	Residue Wght mG	Vol. Anal. mG mL	Sample Size Gm L	SMPLE CNT DATA Hldr Num.	Total Alpha	Counts Beta	Net Sample Counts/Minute Alpha	Beta	DPM / Aliqout Alpha	Beta	uCi per Sample Alpha	Beta	2 Sigma Error uCi per Sample Alpha	Beta	pCi/(Gm or L) Alpha	Beta	Category 1 Yes/No	Aliquot to Cat 1 Gm or L Alpha	Beta
~~B09TB8~~ (1) B09T09 8-1-94 AC		47.9	3	1.0	1	0	37	-0.06	2.82	-5.2E-01	6.40E+00	-7.8E-05	9.6E-04	-1.4E-07	3.8E-07	-7.8E+01	9.6E+02	Yes	-1.3E+02	1.0E+02
B0CJ96		2.2	10	2.5	2	4	25	0.34	1.62	1.14E+00	3.19E+00	1.3E-04	3.6E-04	1.6E-07	2.0E-07	5.1E+01	1.4E+02	Yes	2.0E+02	7.0E+02
B0CJB2		2.7	10	2.5	3	2	26	0.14	1.72	4.17E-01	3.53E+00	4.7E-05	4.0E-04	1.0E-07	1.7E-06	1.9E+01	1.6E+02	Yes	5.3E+02	6.3E+02
B0CJB6		4.3	10	2.5	4	3	17	0.24	0.82	8.34E-01	1.58E+00	9.4E-05	1.8E-04	1.4E-07	2.7E-07	3.8E+01	7.1E+01	Yes	2.7E+02	1.4E+03
TOTAL uCi												1.9E-04	1.9E-03							

SDG W0157

408011 Chem

408012 Rad

8-16-94 E94-008 *** GAMMA ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD 2-Aug-1994
Page 1

CUSTOMER: BHC SAMPLE DELIVERY GROUP 420157

MATRIX : WATER BATCH NUMBER 8-012

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	L0801218				
	L0801215				
1)	40801201		BHC	B09TD9	
	F0801201				

ACTIONS (Initial & Date)

1) INITIATED PB 8/2/94
2) PREP LAB RECEIVED ~~JW~~ 8-5-94
3) SAMPLE REMAINDER STORED ~~JW~~ 8-5-94
4) SEPARATION LAB RECEIVED N/A
5) COUNTING/MEASUREMENT LAB AP 8-8-94
6) DATA REVIEWED AND ANALYTICAL PREP STORED JK 8-14-94

Priority

0025

8-10-94 B94-00 &

*** TC-99 ***

CHAIN-OF-CUSTODY BATCH ANALYSIS RECORD

2-Aug-1994
Page 1

CUSTOMER: BHC

SAMPLE DELIVERY GROUP W0157

MATRIX : WATER

BATCH NUMBER 8-012

	ITAS ID	DUP	ACCOUNT	CUSTOMER ID	COMMENTS
	L0801211N	L0801218		W0801201	
	L0801221N	L0801211M		F0801201	
1)	40801201		BHC	B09TD9	Muddy sample. SB 8/17/94

ACTIONS (Initial & Date)

1) INITIATED RB 8/2/94

2) PREP LAB RECEIVED 8/10/94 mmm

3) SAMPLE REMAINDER STORED N/A

4) SEPARATION LAB RECEIVED 8/10/94 mmm

5) COUNTING/MEASUREMENT LAB SK 8-15-94

6) DATA REVIEWED AND ANALYTICAL PREP STORED SB 8/17/94

Priority

W0801201 EQNI271 · 300.54 & 3.7219

L0801211M EQNI272 300.17 & 3.7174

Quanterra Environmental Services

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
314 298-8757 Fax

CERTIFICATE OF ANALYSIS

Westinghouse Hanford Company
P.O. Box 1970
Richland, Washington 99352

September 9, 1994

Attention: J. A. Lerch

Project number	:	550.04
Date Received by Lab	:	August 1, 1994
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W0157
Data Deliverable	:	Summary

I. Introduction

On August 1, 1994, one (1) water sample was received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. Upon receipt, the sample was given the following laboratory ID number to correspond with the specific client ID:

St Louis ID	WHC ID	Richland ID	Matrix	Date of Receipt
5719-001	B09TD9	40801101	Water	08/01/94

II. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits.

Analyses requested: Cyanide by EPA method 9010.

III. Quality Control

A Laboratory Control Sample and Method Blank were analyzed with each preparation batch. A Matrix Spike and Duplicate analysis was performed per the protocol for this analyte.

IV. Definitions

The following codes are used to denote laboratory quality control samples and can be found in the data summary section of this report:

QCBLK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike

V. Comments

The temperature of the sample cooler, upon receipt, was 1° C which is below the recommended temperature of 4° ± 2° C.

The pH of the sample, upon receipt, was 9.

There was insufficient sample volume (1 L) for this analysis and QC to be run at full volume (500 ml). Therefore, the Sample was run at full volume while the Duplicate and Matrix Spike were analyzed using half the volume (250 ml). However, since the sample values are high, the increased detection limit does not affect the analytical results.

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:

Wade H. Price
Project Manager
z:\annelars\hanw0157.nar

OFFICE OF SAMPLE MANAGEMENT

RECORD OF DISPOSITION

ROD-B94-012
Record of Disposition No.

DATE: 08/05/94

LABORATORY: Quanterra

PROJECT TITLE/NO.: 200-BP-5 (Charact. to Support Pump and Treat)/B94-008

NCR NO.: N/A

SAMPLE IDENTIFICATION NUMBERS:

B09TD7, B09TD8, B09TD9

DESCRIPTION OF EVENT:

Sample volumes submitted are insufficient to run contractually required QC (duplicates and matrix spikes).

DISPOSITION OF SAMPLES:

Analyze reduced sample volumes as outlined on attached issue resolution form. Detection limits will be increased proportionally for the reduced analyzed volumes.

APPROVAL SIGNATURES:

R. C. Smith/ RC Smith — 8/5/94
OSM Project Coordinator (Print/Sign Name) — Date

D. B. Erb/ David B. Erb — 8/8/94
Technical Representative (Print/Sign Name) — Date

N/A
Quality Assurance (Print/Sign Name) — Date

ORIGINAL → RICHLAND

CC: VAN WADE
JIM TAMI
SUZI

0000037

Quanterra August 03, 1994 10:13 am

Account: 10722 Project: 550.04 Quanterra-Richland DAS No. 661 Rev. 0

Master Sample Login: 5719

Project Manager: W. Price

Draft: Final: Entered and Reviewed by: PM Review:

Sample Header Template:

Sample No. / Client ID / C-Matrix / Date: Collected / Received / Due / Shipper / Rad Category / Rad Sample No.									
Comments									
# Container Type	Analysis		Class	Preservative	Anal. Due Date	Hold Date	Site		(Container Numbers:% Filled)
Data:									
5719-001 B09TD9		Water			30-JUL-94 09:55	01-AUG-94 10:45	15-AUG-94	FED-EX	1 Screening not Required
NOTE: RICHLAND ID 40801101									
1 PN - Plastic-1L	CN/9010/Q4		S	NAOH	12-AUG-94	13-AUG-94	SID		(89814:100)
5719-001DUP B09TD9		Water			30-JUL-94 09:55	01-AUG-94 10:45	15-AUG-94	FED-EX	1 Screening not Required
NOTE: RICHLAND ID 40801101									
1 PN - Plastic-1L	CN/9010/Q4		S	NAOH	12-AUG-94	13-AUG-94	SID		(89814:100)
5719-001MS B09TD9		Water			30-JUL-94 09:55	01-AUG-94 10:45	15-AUG-94	FED-EX	1 Screening not Required
NOTE: RICHLAND ID 40801101									
1 PN - Plastic-1L	CN/9010/Q4		S	NAOH	12-AUG-94	13-AUG-94	SID		(89814:100)

3*=Sample has not been rad screened.

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 481754
Page 1 of 1

Project Name/No.[1] B94-008
Sample Team Members[2]
Profit Center No.[3] 4632
Project Manager[4] Von Pettey
Purchase Order No.[6]
Required Report Date[11] 8/16/94 WHC Priority

Samples Shipment Date[7] 8/1/94
Lab Destination[8] St Louis
Lab Contact[9]
Project Contact/Phone[12]
Carrier/Waybill No.[13]

Bill to:[5] Quanterra Richland
Report to:[10] Quanterra Richland

ONE CONTAINER PER LINE

Sample Number[14]	Sample Description/Type[15]	Date/Time Collected[16]	Container Type[17]	Sample Volume[18]	Preservative[19]	Requested Testing Program[20]	Condition on Receipt[21]	Disposal Record No.[22]
40801101A	B09TD9/H2O	See WHC 7/30/94 0955	Pol COC/SAR	1L Poly	4°C NAOH	See WHC COC/SAR CYANIDE	2 of 2 100 pH-9	
~~8/1/94~~							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

Special Instructions:[23]

Possible Hazard Identification:[24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☑

Sample Disposal:[25]
Return to Client ☐ Disposal by Lab ☐ Archive ____ (mos.)

Turnaround Time Required:[26]
Normal ☐ Rush ☑ WHC Priority

QC Level:[27]
I. ☐ II. ☐ III. ☐ Project Specific (specify): SDG WO157

1. Relinquished by[28] (Signature/Affiliation)	Date: 8/1/94 Time: 1600	1. Received by[28] (Signature/Affiliation) QUANTERRA-STLOUIS	Date: 8-2-94 Time: 09:30
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments:[29]
000065

*See back of form for special instructions.

MCA 3/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

C U R and C.O.C.
COPIED TO: W. Price
DATE: 8-2-94
TIME: 11:15
BY: J. Daniels

Work Order No.: 5719

Condition Upon Receipt Variance Report
ITAS - St. Louis Laboratory

Client: QUANTERRA - RICHLAND
Date: 8-2-94
Project No: 550.04
Initiated by: Jeff Daniels
Analysis Requested: Refer to RFA/COC
RFA/COC Numbers: ~~481753~~ 481754
Client Sample Numbers Affected: Entire Login

Condition/Variance (Check all that apply): Circle Number to Denote that Item was Evaluated. "NA" = "Not Applicable".

1.	NA	Not enough sample received for proper analysis. Received approximately: _____	(8)	☐	Custody tape disturbed/broken/missing.
			9.	NA	Sample splits performed by lab.
(2)	☐	Sample received broken/leaking.	10.	NA	Volatile sample received with approximately _____ mm headspace.
3.	☒	Sample received without proper preservative.			
	☒	Cooler temperature not within 4°C ± 2°C. Record temperature: 1°C	(11.)	☐	Sample ID on container does not match sample ID on paperwork. Explain:
	☒	pH pH - 9			
	☐	other: _____			
(4.)	☐	Sample received in improper container.	(12.)	☐	All coolers on airbill not received with shipment.
(5.)	☐	Sample received without proper paperwork. Explain:	(13.)	☐	Other (explain below): Shipping containers not rad surveyed.
(6.)	☐	Paperwork received without sample.			
(7.)	☐	No sample ID on sample container.			

Notes:

Corrective Action:

☐ Client's Name: _____ Informed verbally on: _____ By: _____

☐ Client's Name: _____ Informed in writing on: _____ By: _____

☐ Sample(s) processed "as is". Comments: _____

☐ Sample(s) on hold until: _____ If released, notify: _____

Sample Control Supervisor Review: (or designee) Jeff Daniels Date: 8-2-94

Project Management Review: _____ Date: 8-2-94

000006

080194A WQ2

TENNELEC #2

SCREENING CALCULATION SPREADSHEET

all Cat I [illegible] 8/1/94

Cust Code	Recieved Date		Screening Prep Date		Count Date	Mnts Cntd	BACKGROUND Alpha	Beta	Mnts
WHC	8-1-964		8-1		8-1	10	15	211	240

Customer ID WHC/LIO	pH <2 Rcvd/Reiq	Residue Wght mG	Vol. Anal mG mL	Sample Size Gm L	SMPLE CNT DATA Hldr Num	Total Alpha	Counts Beta	Net Sample Counts/Minute Alpha	Beta	DPM / Aliqout Alpha	Beta	uCi per Sample Alpha	Beta	2 Sigma Error uCi per Sample Alpha	Beta	pCi/(Gm or L) Alpha	Beta	Category 1 Yes/No	Aliquot to Cat 1 Gm or L Alpha	Beta
~~B00TB8~~		47 9	3	1.0	1	0	37	-0 06	2 82	-5 2E-01	6.40E+00	-7.8E-05	9 6E-04	-1.4E-07	3 8E-07	-7.8E+01	9.6E+02	Yes	-1.3E+02	1.0E+02
B0CJ96		2 2	10	2 5	2	4	25	0 34	1.62	1.14E+00	3 19E+00	1.3E-04	3 6E-04	1 6E-07	2.0E-07	5.1E+01	1.4E+02	Yes	2.0E+02	7.0E+02
B0CJB2		2.7	10	2 5	3	2	28	0.14	1.72	4 17E-01	3.53E+00	4.7E-05	4 0E-04	1 0E-07	1.7E-06	1.9E+01	1.6E+02	Yes	5.3E+02	6.3E+02
B0CJB6		4 3	10	2 5	4	3	17	0 24	0.82	8 34E-01	1.58E+00	9 4E-05	1.8E-04	1.4E-07	2.7E-07	3.8E+01	7.1E+01	Yes	2.7E+02	1.4E+03
TOTAL uCi												1 9E-04	1 9E-03							

109TD5 -1-44 [illegible]

00000 [illegible]

3

INTERNATIONAL TECHNOLOGY CORPORATION

Regional Office
2800 George Washington Way
Richland, Washington 99352

SAMPLE CHECK-IN LIST

(1 Per Shipping Container)

Date/Time Received 8-1-94 1045 Client Name WHC

Project/Client # 394-008 Batch or Case # ____

Cooler ID (if noted on the outside of cooler) GW5015

1. Condition of shipping container? O.K.
2. Custody Seals on cooler intact? Yes ☐ No ☐
3. Custody Seals dated and signed? Yes ☐ No ☐
4. Chain of Custody record is taped on inside of cooler lid? Yes ☐ No ☐
5. Vermiculite/packing material is: Wet ☐ Dry ☐
6. Each sample is in a plastic bag? Yes ☐ No ☐
7. Number of sample containers in cooler: 14
8. Samples have: ____ tape ____ hazard labels ____ custody seals ____ appropriate sample labels
9. Samples are: ____ in good condition ____ leaking ____ broken ____ have air bubbles ____ other
10. Coolant present? Yes ☒ No ☐

Sample temperature 4°

11. The following paperwork should be accounted for (N/A if not applicable): N/A

    Chain of Custody #'(s) ____

    Request for analysis #(s) ____

    Airbill # ____ Carrier ____
12. Have any anomalies been identified above? Yes ☐ No ☑
13. Memos have been initiated for all anomalies identified above? Yes ☐

Printed Name/Signature [signature] Date/Time 8-1-94 1045

FORM NO. LS-042, Rev.0, 2/94

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NO. (To be obtained from PROPERTY MANAGEMENT)
BHI		W94-0-0746-45

PART I - TO BE COMPLETED BY ORIGINATOR

Department	Section	Unit
ER Eng Support	Field & Analytical Supp	ER Field Sampling

The following items are to be shipped from ☒ Contractor ☐ Vendor

Routing ☐ Prepaid ☐ Collect

Shipped to
Company Quanterra (IT)
Address 2800 George Washington Way
City Richland, WA 99352 State Zip Code
Country

Off-site Custodian

On-site Custodian Payroll No.

Qty.	Property No.	Description (include Manufacture Name, Model, Serial No.)	Acquisition Cost
1 lbs.		Sample #: B0CJB2 B0CJB3 B0CJB6 B0CJB7 Cooler ID: BOWERSED Polycooler with groundwater samples packed in wet ice and vermiculite	N/A
1 lbs.		Sample #: B0CJ96 B0CJ97 Cooler ID: GWS 015 Polycooler with groundwater samples packed in wet ice and vermiculite	N/A

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the off-site use of this property
☐ Required for Project Work. List Project No. 100 HR-3
☐ Business Trip
☐ Off-site Assignment
☐ Shipment to Subcontractor. List Subcontract No.
☐ Other (Please specify) Sampling supports RI/FS work in the 100 area.

Bill of lading # NA

RECEIVED
AUG 1 1994
PROPERTY RECORDS

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release	RM Survey No.	Date
RK Smith	181143	8/1/94

Location of and Contact for Property (Name/Phone No./Bldg./Area)
RMX P. H. Butcher/(509)376-4388

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
8/1/94	88410 / PE3A	NA

Originated By	Date	Authorized By	Date
AJ SIMPSON		AJ Simpson	8/1/94
Property Representative Signature	**Date**	**Property Management Approval**	**Date**
		JP Hanker	8/1/94

PART II - TO BE COMPLETED BY SHIPPING

Authorized Shipping Signature	Date

DISTRIBUTION (AFTER FINAL SIGNATURES) 000009

White - Property Management Yellow - Shipping Green - Accounts Payable Pink - Originator Goldenrod - Property Management

54-3000-478 (01/94)

8/1/94 1045

SAMPLE RECEIPT VARIANCE REPORT
ITAS-RICHLAND LABORATORY

WORK ORDER NUMBER: 408011, 408012 DATE INITIATED: 8/1/94

INITIATED BY: TGilmore

DATE/TIME OF SAMPLE (AND/OR RFA & COC) RECEIPT: 8/1/94 1045

CLIENT SAMPLE NUMBER	RFA/COC NUMBERS	ANALYSIS REQUESTED
B09TD9		

Samples were received with the following deficiencies:

☐ 1. Not enough sample received for proper analysis.
☐ 2. Sample received without proper preservative.
☐ 3. No sample received in container.
☐ 4. Sample received without a RFA/COC form.
☐ 5. No sample ID on container.
☐ 6. Sample received broken or leaking.
☐ 7. Holding time exceeded at receipt.
☐ 8. Custody tape broken.
☐ 9. COC not relinquished by client.
☐ 10. Sample information on container does not match sample information on the paper work (Explain below).
☐ 11. All shipping containers (coolers) on waybill not received with shipment.
  ☐ RFA/COC received
  ☐ RFA/COC not received
☒ 12. Other (Explain below).

NOTES: No screen data supplied.

SUPERVISOR REVIEW: _____

PROJECT MANAGER REVIEW: _____

TELEPHONED TO: _____ ON _____ BY _____

TELEFAXED TO: _____ ON _____ BY _____

SIGNED ORIGINAL MUST BE RETAINED IN WORK ORDER FILE

FORM NO. LS-023, 3/92, Rev. 0

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: [x] Priority [ ] Normal

Collector: L.E. ROGERS / W. SEFZEK	Company Contact: L.E. ROGERS	Telephone No: 376-7690
Project Designation: 200-BP-5 (CHARACTER TO SUPPORT PUMP & TREAT)	Sampling Location: 200-BP-5	SAF No.: B94-008
Ice Chest No.: GWS015	Field Logbook No.: EFL-1143	Method of Shipment: GOVERNMENT VEHICLE
Shipped To: QUANTERRA	Offsite Property No.:	Bill of Lading/Air Bill No.:
Possible Sample Hazards/Remarks:		

	Preservative	NaOH	HCl		none													
	Type of Container	P	P/G		G													
	No. of Container(s)	1	2		1													
Special Handling and/or Storage: COOL TO 4C	Volume	1000ml	1000ml		40 ml													
SAMPLE ANALYSIS		Cyanide 4080/101	Co-60 Tc-99 4080/1201		Activity scan													

Sample No.	Matrix*	Date Sampled	Time Sampled																
B09TD9	W	7/30/94	0955	✓	✓		✓												
	W																		
	W																		
	W																		
	W																		
	W																		

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By	[signature]	8/1/94 0930
Received By	[signature]	8/1/94 0930
Relinquished By	[signature]	8/1/94 1145
Received By	[signature] Quanterra	8/1/94 1045
Relinquished By		
Received By		
Relinquished By		
Received By		

SPECIAL INSTRUCTIONS

SDG W0157

Matrix*

S	=	Soil
SE	=	Sediment
SO	=	Solid
SL	=	Sludge
W	=	Water
O	=	Oil
A	=	Air
DS	=	Drum Solids
DL	=	Drum Liquids
T	=	Tissue
WI	=	Wipe
L	=	Liquid
V	=	Vegetation
X	=	Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original - Sample Yellow - Sampler

BC-6000-828 (12/92)

000011

Quanterra
Environmental Services

Bechtel Hanford Company
P.O. Box 1970
Richland, WA 99352

Project: 550.04

Category: Cyanide
Method: EPA 9010
Matrix: Water

Sample Date
Receipt Date
Report Date

Client ID	Quanterra ID	Analyte	CAS Number	Blank Sample Name	Prep. Date	Analyses Date	Result	Unit	Qu
B09TD9	5719-001	Cyanide	57-12-5	QCBLK42345-1	08/03/94	08/03/94	16.4	UG/L	
B09TD9	5719-001DUP	Cyanide	57-12-5	QCBLK42345-1	08/03/94	08/03/94	16.6	UG/L	
B09TD9	5719-001MS	Cyanide	57-12-5	QCBLK42345-1	08/03/94	08/03/94	89	%REC	
NA	QCBLK42345-1	Cyanide	57-12-5	QCBLK42345-1	08/03/94	08/03/94	5.0	UG/L	U
NA	QCLCS42345-1	Cyanide	57-12-5	QCBLK42345-1	08/03/94	08/03/94	95	%REC	